

DATE: July 1, 2002

SUBJECT: Caustics Applications

REFERENCE: Durlon 9000

TO: Sales

FROM: Jim Lingenfelder

Durlon 9000 has been tested and used extensively in caustics. Below are details of in the flange testing during 1991 to 1993 of Durlon 9000 in various Chlor-Alkali plant services by Dow Chemical, in Freeport, Texas and Midland, MI. Durlon 9000 had to pass immersion testing in each unit, which varied from 6 weeks to 6 months, before flange testing.

<u>Service</u>	<u>Temperature</u>	<u>Pressure</u>	<u>Duration</u>	<u>Comments</u>
Liquid Chlorine	-50°F	110 psi	2 years	Severe service in evaporator. Cycled from -30°F to warm.
Chlorine gas	ambient	95 psi	1 year	
15 % Caustic	190°F	65 psi	11 months	
25 % Caustic	240°F	65 psi	11 months	
48 % Caustic	330°F	65 psi	11 months	

After successfully completing the above testing, Durlon 9000 was subsequently approved by Dow North America and placed on their PMMS Chlor-Alkali Plant piping specs.*

Other chlorine manufacturers use Durlon 9000 in chlorine and caustics applications similar to those above including an OxyChem plant (below) where Durlon 9000 has been used for +10 years in the following:

<u>Service</u>	<u>Temperature</u>	<u>Pressure</u>
Dry chlorine gas	Class 150 & 300, RF	
“ (low temp)	-50, -20°F	275 psi
98% H2SO4	Class 150, RF	
20 % Caustic	Class 150, RF	
Caustic Sump	Class 150, RF	
Liquid Chlorine	-50°F	720 psi
50 % Caustic	20°F	515 psi
	140°F	515 psi
	500°F	150 psi
EDC+H2O+CAT/EDC+Acid/EDC +Caustic/Wastewater	0°F	275 psi
	300°F	200 psi

*Durlon 9000 was approved on other Dow plant piping specs but this discussion is limited to caustics applications.